

THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND
INTERFERENCES

In re Application of

Jan Willem Aarts, et al.

OPTICAL SCANNING DEVICE
AND OPTICAL PLAYER
COMPRISING SUCH A
SCANNING DEVICE

Confirmation No.: 1891

Serial No. 09/904,077

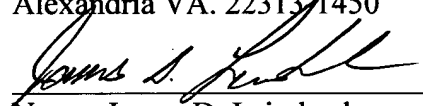
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Examiner: Peter Vincent Agustin

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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Serial No. 09/904,077

Real party in interest

The real party of interest is the Assignee who is U. S. Philips Corporation, a corporation existing under the laws of the State of Delaware (hereinafter Appellant).

Related appeals and interferences

There are no related appeals or interferences to the present application that are known to appellants, the appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of the Claims

Claims 1-20 are pending in the present application for invention. Claims 1-20 are drawn to an optical scanning device and, more particularly, to an electric coil system used to control an actuator that controls displacement of a lens system. Claims 1-20 stand rejected as the claims that are currently being appealed. A copy of appealed claims 1-20 is contained in Appendix I following this brief.

Status of the Amendments After Final

A response was filed subsequent to the final rejection to overcome the Examiner's rejection of claims 1-20 under the provisions of 35 U.S.C. §102(b). The Examiner in an Advisory Action dated August 5, 2005 indicated that the rejections of claims 1-20 under U.S.C. §102(b), stands.

Summary of the Claimed Subject Matter

The appealed claims define subject matter for an optical scanning device and, more particularly, to an electric coil system used to control an actuator that controls displacement of a lens system.

Appealed claim 1 defines subject matter for an optical scanning device (reference numeral 15 in Figure 1 as discussed in the specification on page 7, line 17-page 9, line 24) for scanning an information layer (reference numeral 13 in Figures 1 and 2, as discussed in the specification on page 7, line 17-page 9, line 24) of an optically scannable information carrier (reference numeral 9 in Figures 1 and 2 as discussed in the specification on page 7, line 17-page 9, line 24). The scanning device (15) is provided with a radiation source (25), an optical lens system (39) with an optical axis (41) for focusing a radiation beam (51) supplied, in operation, by the radiation source (25) into a scanning spot on the information layer, and an actuator (reference numeral 57 in Figure 2, discussed on page 9, lines 13-24) by means of which the lens system (39) can be displaced with respect to a stationary part (59) of the scanning device (15) at least in a direction parallel to the optical axis (41), as discussed on page 9, lines 13-17. The actuator (57) is provided with an electric coil system (reference numeral 63 in Figure 3A), which is arranged in a fixed position with respect to the lens system (page 9, lines 29-31), and a magnetic system (61) which is arranged in a fixed position with respect to the stationary part (page 9, lines 28-29).

Appealed claim 1 is characterized as described on page 10, lines 10-24, and illustrated in Figure 3A, in that the magnetic system (61), viewed parallel to an X-direction extending perpendicularly to the optical axis, is arranged in its entirety next to and outside the coil system (63), the magnetic system comprises a first part (67) and a second part (69) on opposite sides of the optical axis (page 10, lines 5-9), the first part (67) and the second part (69) of the magnetic system (61) each comprise at least a first (71, 77) and a second (73, 79) permanent magnet. At least a part of the coil system being situated in a magnetic stray field of the magnetic system (page 11, 8-13). As illustrated in Figures 3A and 3B, the coil system (63) further comprises a portion (107, 109) of the coil system (63) situated symmetrically with respect to a junction (119, 121) of the first (71, 77) and the second magnet (73, 79) for both the first (67) and second part (69) of the magnetic system, said portion (107, 109) being situated between a pair of portions (95, 97 and 101, 103 as illustrated in Figure 3B and discussed on page 11, lines

14-20) of the coil system (63) arranged directly opposite, respectively, the first (67) and second (69) parts of the magnetic system (61) such that the first (67) and second (69) part of the magnetic system extend entirely across the pair of portions (87, 89) of the coil system (63) as illustrated in Figures 3A and 3B.

Appealed claim 9 defines subject matter for an optical scanning device (reference numeral 15 in Figure 1 as discussed in the specification on page 7, line 17-page 9, line 24) having a radiation source (25) providing a radiation beam, an optical lens system (39) with an optical axis (41) for focusing the radiation beam (51) into a scanning spot on an information layer (reference numeral 13 in Figures 1 and 2, as discussed in the specification on page 7, line 17-page 9, line 24), and an actuator (reference numeral 57 in Figure 2, discussed on page 9, lines 13-24) that can displace the lens system (39), the actuator (57) being provided with an electric coil system (reference numeral 63 in Figure 3A), which is arranged in a fixed position (page 9, lines 29-31) with respect to the lens system (39), and a magnetic system (61) which is arranged in a fixed position with respect to a stationary part (page 9, lines 28-29).

Appealed claim 9 further defines a first part a first part (67) and a second part (69) to the magnetic system arranged on opposite sides of the optical axis (page 10, lines 5-9), the first part (67) and the second part (69) of the magnetic system each comprise at least a first (71, 77) and a second (73, 79) permanent magnet. At least a part of the coil system being situated in a magnetic stray field of the magnetic system (page 11, 8-13). A portion (107, 109) of the coil system (63) situated symmetrically with respect to a junction (119, 121) of the first (71, 77) and the second magnet (73, 79) for both the first (67) and second part (69) of the magnetic system, said portion (107, 109) being situated between a pair of portions (95, 97 and 101, 103 as illustrated in Figure 3B and discussed on page 11, lines 14-20) of the coil system (63) arranged directly opposite, respectively, the first (67) and second (69) parts of the magnetic system (61) such that the first (67) and second (69) part of the magnetic system extend entirely across the pair of portions (87, 89) of the coil system (63) as illustrated in Figures 3A and 3B, having wires extending perpendicular to the optical path (page 10, line 25-page 11, line 2). The magnetic system, viewed parallel to an X-direction extending perpendicularly to the optical axis, is arranged in its entirety next to and outside the coil system (page 10, lines 5-9).

Appealed claim 16 defines subject matter for an optical scanning device (reference numeral 15 in Figure 1 as discussed in the specification on page 7, line 17-page 9, line 24) having a radiation source (25) providing a radiation beam, an optical lens system (39) with an optical axis (41) for focusing the radiation beam (51) into a scanning spot on an information layer (reference numeral 13 in Figures 1 and 2, as discussed in the specification on page 7, line 17-page 9, line 24), and an actuator (reference numeral 57 in Figure 2, discussed on page 9, lines 13-24) that can displace the lens system (39), the actuator (57) being provided with an electric coil system (reference numeral 63 in Figure 3A), which is arranged in a fixed position page 9, lines 29-31) with respect to the lens system, and a magnetic system which is arranged in a fixed position (with respect to a stationary part (page 9, lines 28-29).

The subject matter defined by appealed claim 16 includes a first part (67) and a second part (69) to the magnetic system arranged on opposite sides of the optical axis (page 10, lines 5-9), the first part (67) and the second part (69) of the magnetic system each comprise at least a first (71, 77) and a second (73, 79) permanent magnet.

At least a part of the coil system being situated in a magnetic stray field of the magnetic system (page 11, 8-13). A portion (107, 109) of the coil system (63) situated symmetrically with respect to a junction (119, 121) of the first (71, 77) and the second magnet (73, 79) for both the first (67) and second part (69) of the magnetic system, said portion (107, 109) being situated between a pair of portions (95, 97 and 101, 103 as illustrated in Figure 3B and discussed on page 11, lines 14-20) of the coil system (63) arranged directly opposite, respectively, the first (67) and second (69) parts of the magnetic system (61) such that the first (67) and second (69) part of the magnetic system extend entirely across the pair of portions (87, 89) of the coil system (63) as illustrated in Figures 3A and 3B (page 10, line 25-page 11, line 2). The magnetic system, viewed parallel to an X-direction extending perpendicularly to the optical axis, is arranged in its entirety next to and outside the coil system (page 10, lines 5-9).

Grounds of Rejection to be Reviewed on Appeal

The Advisory Action dated August 5, 2004 indicated that the rejections to claim 11-22 stand. Claims 1 through 20 are the appealed claims. Appealed claims 1-20 are rejected under the provisions of 35 U.S.C. §102(b), as being anticipated by U.S. Patent No. 6,058,081 issued in the name of Schell et al. (hereinafter referred to as *Schell et al.*).

Argument

The rejection of appealed claims 1-20 under the provisions of 35 U.S.C. §102(b) as being anticipated via over *Schell et al.*

A. The rejection under 35 U.S.C. S 102(b)

Appealed claims 11 through 22 stand rejected under the provisions of 35 U.S.C. §102(e) as being anticipated by *Schell et al.* (U.S. Patent No. 6,058,081). The examiner's position is that *Schell et al.* disclose every element defined by appealed claims 11-17 and 19.

Present practice within the United States Patent and Trademark Office views anticipation in accordance with the courts opinion in *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) which states that a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." The appellants, respectfully, assert that the rejection should be reversed because each and every element within the rejected claims is not found within *Schell et al.* The MPEP at §2131 further quotes the courts opinion in *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) in stating that the "identical invention must be shown in as complete detail as is contained in the ... claim." The appellants, respectfully, assert that the rejection does not apply a reasonable interpretation of the term "entirely" contained within the each of the appealed claims. The rejected claims define a magnetic structure that extends entirely across the coil system. The rejection cites a magnetic structure within *Schell et al.* that extends only partially across the coil system. The rejection alleges that *Schell et al.* discloses a magnetic structure that extends entirely across the coil

system. It is the position of the appellants that the *Schell et al.* do not disclose or suggest a magnetic structure that extends entirely across the coil system as required by the appealed claims.

B. The reference

Schell et al. (U.S. Patent No. 6,058,081) relates to an optical drive system having an objective lens assembly disposed in an objective lens subassembly. A servomotor moves the objective lens (see Abstract). *Schell et al.* teach a two-axis moving coil actuator. FIG. 26 illustrates a two-axis actuator 2-10 that includes an objective lens 2-12 within a lens holder 2-14. Coil 2-16 is affixed to lens holder 2-14 and positioned perpendicular to the Z-axis as shown in Figure 26. Focus coils 2-18 and 2-20 are located at the sides of the lens holder 2-14 and affixed tracking coil 2-16 perpendicular to the Y axis as shown in Figure 26. A first pair of permanent magnets 2-22 is positioned adjacent the coil 2-18 and a second pair of permanent magnets 2-24 is positioned adjacent focus 2-20 (see discussion related to Figure 26 beginning on col. 30, line 59 and proceeding through col. 31, line 4). Note that the two magnet pairs 2-22, 2-24 do not extend entirely across the pair of coils coil 2-18 and 2-20.

Schell et al. describe the permanent magnet pairs 2-22 and 2-24 as being oriented with opposite poles opposing each other as represented in Figures 32 and 33 (see col. 34, lines 1-5). Current is applied to the tracking coil 2-16 that interacts with the magnetic field produced by the permanent magnet pairs 2-22 and 2-24 to produce forces which move the actuator 2-10 in the desired direction (see col. 32, lines 9-36). The magnet pairs 2-22 and 2-24 remain stationary during movement of the lens holder 2-14. Suspension wires suspend the objective lens holder 2-14 between the magnet pairs 2-22 and 2-24 (see col. 32, lines 59-65). *Schell et al.* teach that a control signal is generated by the servo system to apply a current to the tracking coil 2-16 and/or the focus coils 2-18 and 2-20 depending on the direction of displacement of the lens holder 2-14. This current interacts with the electromagnetic field produced by the permanent magnet pairs 2-22 and 2-24 to create a force which displaces the lens holder 2-14 and objective lens 2-12 in the desired direction (see col. 33, lines 56-67). *Schell et al.* teach that the flux lines generated

by the second magnet pair 2-24 curve oppositely of those generated by the first magnet pair 2-22, and that the direction of the magnetic field at any point in the focus coil 2-20 is different than the direction of the field at the corresponding point in the focus coil 2-18. The forces add to produce a resultant force that is vertically upward (see col. 34, line 66-col. 35, line 14).

Schell et al. asserts that the actuator design taught, therein, employs only two pair of permanent magnets, using four total magnets, and three coils are required to effect movement in both the tracking and focusing directions. The component count for the actuator is reduced and the actuator is easy to manufacture (see col. 35, lines 58-65).

The appellant, respectfully, point out that *Schell et al.* do not disclose or otherwise suggest that magnetic system elements 2-22 and 2-24 extend entirely across the pair of portions 2-18 and 2-20 of the coil system. Figure 26 of *Schell et al.*, As clearly discloses that magnetic system elements 2-22 and 2-24 extend only partially across the pair of portions 2-18 and 2-20 of the coil system. The entire discussion of *Schell et al.* provide no motivation for a person skilled in the art to envision extending the magnetic system elements 2-22 and 2-24 to extend entirely across the pair of coil portions 2-18 and 2-20.

C. The differences between the invention and the reference

Appealed claim 1

The Examiner's position as expressed in the Advisory Action dated August 5, 2005 is that magnetic portions 2-22 and 2-24 extend entirely across coil portions 2-18 and 2-20. The appellants respectfully, draw the Board's attention to Figure 26 within *Schell et al.* The Examiner's position is that Figure 26 within *Schell et al.* discloses that magnetic portions 2-22 and 2-24 extend entirely across coil portions 2-18 and 2-20. The appellants, respectfully, assert that a cursory view of Figure 26 within *Schell et al.* clearly shows that magnetic portions 2-22 and 2-24 do **not** extend entirely across coil portions 2-18 and 2-20. In fact Figure 26 within *Schell et al.* clearly illustrates that magnetic portions 2-22 and 2-24 extend only across a portion of coil portions 2-18 and 2-20. It should be further noted that *Schell et al.* do not disclose, mention or otherwise suggest anything that could reasonably be seen as motivating a person

skilled in the art to modify the subject matter taught by *Schell et al.* to create an optical scanning device wherein the magnetic portions extend across the coil portions.

The term “entirely” is defined by the American Heritage Dictionary as wholly or completely. Figure 3A (and all the figures within the present application for invention) clearly illustrates that the first part 67 and the second part 69 of the magnetic system extent entirely across the pair of portions 87, 89 of the coil system 63. Figure 26 within *Schell et al.* clearly illustrates that magnetic portions 2-22 and 2-24 extend only partially across coil portions 2-18 and 2-20. The appellants, respectfully, submit that the term “entirely” may not be used in a manner that is completely contradictory to the definition of the term “entirely”. Simply put, partially can not be read as being equivalent to “entirely”.

The MPEP at §2173.05(a) states under that the meaning of every term used in a claim should be apparent from the prior art or from the specification and drawings at the time the application is filed. The appellants, respectfully, submit that at the time the present application for invention was filed, that it was abundantly clear that the first part 67 and the second part 69 of the magnetic system extended entirely across the pair of portions 87, 89 of the coil system 63. Each of the drawings as originally filed illustrates first and second parts of a magnetic system that extend entirely across a pair of portions of the coil system. During patent examination, the pending claims must be given the broadest reasonable interpretation consistent with the specification. *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Prater*, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969). There is nothing within the specification or the drawings to the present application for invention as originally filed that could reasonably lead to the interpretation of the first and second parts of a magnetic system extending entirely across the pair of portions of the coil system as being equivalent to the first and second parts of a magnetic system extending partially across the pair of portions of the coil system. *Schell et al.* clearly illustrates that magnetic portions 2-22 and 2-24 extend only partially across coil portions 2-18 and 2-20. There is no additional disclosure or suggestion within *Schell et al.* for the first and second parts of a magnetic system to extend entirely across the pair of portions of the coil system. Therefore, *Schell et al.* do not anticipate appealed claim 1.

Appealed claim 2

Appealed claim 2 defines the optical scanning device of appealed claim 1, wherein, the magnetic system (defined in appealed claim 1 as extending entirely across coil portions) includes the first part and the second part arranged next to and outside the coil system near, respectively, a first side of the lens system and a second side of the lens system which, viewed in a direction parallel to the X-direction, is opposite the first side, the pair of portions of the coil system having a first part of the coil system arranged near the first side, and a second part of the coil system arranged near the second side, being situated, at least partly, in a magnetic stray field of, respectively, the first part and the second part of the magnetic system. The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest a magnetic system that extends entirely across the coil system arranged next to and outside the coil system near the first and second sides of the lens system as defined by appealed claim 2.

Appealed claim 3

Appealed claim 3 defines subject matter for the optical scanning device of appealed claim 1, wherein the first part and the second part of the magnetic system, and the first part and the second part of the coil system, viewed in a direction parallel to the X-direction, are symmetrically arranged with respect to the optical axis. The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest a magnetic system that extends entirely across the coil system wherein the first and second parts of the magnetic system, and the first second parts of the coil system are symmetrically arranged with respect to the optical axis.

Appealed claim 4

Appealed claim 4 defines the subject matter of appealed claim 2, wherein the first and second permanent magnet viewed in a direction parallel to the optical axis are arranged next to each other and have a direction of magnetization extending, respectively, parallel to the X-direction and parallel to an X'-direction opposite to the X-direction, while the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first and said second part of the coil of the first part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly

opposite, respectively, the first and the second magnet of the first part of the magnetic system, and said first and said second part of the coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the second part of the magnetic system.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest a magnetic system that extends entirely across the coil system. The appellants further submit that *Schell et al.* do not disclose or suggest a coil system wherein the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis.

Appealed claim 5

Appealed claim 5 defines the optical scanning device of appealed claim 2, characterized in that the first and the second permanent magnets viewed in a direction parallel to the optical axis are arranged next to each other and have a direction of magnetization extending, respectively, parallel to the X-direction and parallel to an X' – direction opposite to said X-direction, while the coil system comprises at least one electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest a magnetic system that extends entirely across the coil system. The appellants further submit that *Schell et al.* do not disclose or suggest a coil system wherein the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis.

Appealed claim 6

Appealed claim 6 defines the subject matter for the signal of appealed claim 2, characterized in that the X-direction extends transversely to an information track present on the information layer, and in that the first and the second permanent magnets viewed parallel to the

optical axis are arranged next to each other and have a direction of magnetization extending, respectively, parallel to the X-direction and parallel to an X'-direction opposite to the X-direction, while the coil system comprises an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said parts of the coil being arranged, viewed in a direction parallel to the optical axis, in a transition region of the two magnets of, respectively, the first part and the second part of the magnetic system.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest a magnetic system that extends entirely across the coil system. The appellants further submit that *Schell et al.* do not disclose or suggest a coil system wherein the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis.

Appealed claim 7

Appealed claim 7 defines subject matter for a storage medium having recorded thereon the signal of appealed claim 1, characterized in that the X-direction extends parallel to an information track on the information layer and the first part and the second part of the coil system each comprise at least one further electric coil from said portion having a first part and a second part, which are provided with wire portions extending parallel to the optical axis. The first part and the second part of the further coil of the first part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the first part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet, and the first part and the second part of the further coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the second part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest a magnetic system that extends entirely across the coil system. The appellants further submit that *Schell et al.* do not disclose or suggest the first part and the second part of the coil system each comprise at least one further electric coil from said portion having a first part and a second part, which are provided with wire portions extending parallel to the optical axis. Furthermore, *Schell et al.* do not disclose or suggest a magnetizable part of the first part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet, and the first part and the second part of the further coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the second part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet.

Appealed claim 8

Appealed claim 8 defines the optical scanning device of appealed claim 1 used within an optical player for scanning an information layer of an optically scannable information carrier, and a table which can be rotated about an axis of rotation, on which table the information carrier can be placed, said scanning device being provided with a radiation source, an optical lens system with an optical axis for focusing a radiation beam supplied, in operation, by the radiation source into a scanning spot on the information layer, and an actuator by means of which the lens system can be displaced with respect to a stationary part of the scanning device, at least in a direction parallel to the optical axis, and a displacement device by which at least the lens system of the scanning device can be displaced, with respect to the axis of rotation, mainly in a radial direction.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device within an optical player for scanning an information layer of an optically scannable information having a magnetic system that extends entirely across the coil system.

Appealed claim 9

The Examiner's position as expressed in the Advisory Action dated August 5, 2005 is that magnetic portions 2-22 and 2-24 extend entirely across coil portions 2-18 and 2-20. The appellants respectfully, draw the Board's attention to Figure 26 within *Schell et al.* The Examiner's position is that Figure 26 within *Schell et al.* discloses that magnetic portions 2-22 and 2-24 extend entirely across coil portions 2-18 and 2-20. The appellants, respectfully, assert that a cursory view of Figure 26 within *Schell et al.* clearly shows that magnetic portions 2-22 and 2-24 do **not** extend entirely across coil portions 2-18 and 2-20. In fact Figure 26 within *Schell et al.* clearly illustrates that magnetic portions 2-22 and 2-24 extend only across a portion of coil portions 2-18 and 2-20. It should be further noted that *Schell et al.* do not disclose, mention or otherwise suggest anything that could reasonably be seen as motivating a person skilled in the art to modify the subject matter taught by *Schell et al.* to create an optical scanning device wherein the magnetic portions extend across the coil portions.

The term "entirely" is defined by the American Heritage Dictionary as wholly or completely. Figure 3A (and all the figures within the present application for invention) clearly illustrates that the first part 67 and the second part 69 of the magnetic system extent entirely across the pair of portions 87, 89 of the coil system 63. Figure 26 within *Schell et al.* clearly illustrates that magnetic portions 2-22 and 2-24 extend only partially across coil portions 2-18 and 2-20. The appellants, respectfully, submit that the term "entirely" may not be used in a manner that is completely contradictory to the definition of the term "entirely". Simply put, partially can not be read as being equivalent to "entirely".

The MPEP at §2173.05(a) states under that the meaning of every term used in a claim should be apparent from the prior art or from the specification and drawings at the time the application is filed. The appellants, respectfully, submit that at the time the present application for invention was filed, that it was abundantly clear that the first part 67 and the second part 69 of the magnetic system extended entirely across the pair of portions 87, 89 of the coil system 63. Each of the drawings as originally filed illustrates first and second parts of a magnetic system that extend entirely across a pair of portions of the coil system. During patent examination, the pending claims must be given the broadest reasonable interpretation consistent with the specification. *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re*

Prater, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969). There is nothing within the specification or the drawings to the present application for invention as originally filed that could reasonably lead to the interpretation of the first and second parts of a magnetic system extending entirely across the pair of portions of the coil system as being equivalent to the first and second parts of a magnetic system extending partially across the pair of portions of the coil system. *Schell et al.* clearly illustrates that magnetic portions 2-22 and 2-24 extend only partially across coil portions 2-18 and 2-20. There is no additional disclosure or suggestion within *Schell et al.* for the first and second parts of a magnetic system to extend entirely across the pair of portions of the coil system. Therefore, *Schell et al.* do not anticipate appealed claim 9.

Appealed claim 10

Appealed claim 10 defines the optical scanning device of appealed claim 9 including: the first part and the second part to the magnetic system which are each arranged next to and outside the coil system near a first side of the lens system and a second side of the lens system which is opposite the first side of the lens system; the pair of portions of the coil system having a first part and a second part, the first part of the coil system arranged near the first side, and the second part of the coil system arranged near the second side.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device wherein the pair of portions of the coil system having a first part and a second part, the first part of the coil system arranged near the first side, the second part of the coil system arranged near the second side and the magnetic system that extends entirely across the coil system.

Appealed claim 11

Appealed claim 11 defines the optical scanning device of appealed claim 10 wherein the first part and the second part of the magnetic system, and the first part and the second part of the coil system are symmetrically arranged with respect to the optical axis.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device wherein the first part and the second part of the magnetic system, and the

first part and the second part of the coil system are symmetrically arranged with respect to the optical axis and the magnetic system extends entirely across the coil system.

Appealed claim 12

Appealed claim 12 defines the optical scanning device of appealed claim 10, wherein the first part and the second part of the magnetic system each comprise the first and the second permanent magnet having respective directions of magnetization extending parallel to the X-direction and parallel to an X'-direction opposite to the X-direction, while the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first and said second part of the coil of the first part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the first part of the magnetic system, and said first and said second part of the coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the second part of the magnetic system.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device wherein the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, and the magnetic system that extends entirely across the coil system.

Appealed claim 13

Appealed claim 13 defines the optical scanning device of appealed claim 10, wherein the first part and the second part of the magnetic system each further comprise the two permanent magnets which, viewed in a direction parallel to the optical axis, are arranged next to each other and have a respective direction of magnetization parallel to the X-direction and parallel to an X'-direction opposite to said X-direction, while the coil system comprises at least one electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first

part and said second part of the coil being arranged, viewed in a direction parallel to the X-direction, directly opposite, respectively, one of the two magnets of the first part of the magnetic system and one of the two magnets of the second part of the magnetic system.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device wherein the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, and the magnetic system that extends entirely across the coil system.

Appealed claim 14

Appealed claim 14 defines the optical scanning device of appealed claim 10, wherein the X-direction extends at least substantially parallel to an information track present on the information layer, and in that the first part and the second part of the coil system each comprise at least one further electric coil from said portion having a first part and a second part, which are provided with wire portions extending parallel to the optical axis, the first part and the second part of the further coil of the first part of the coil system being arranged directly opposite, respectively, the first magnet and a magnetizable part of the first part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet, and the first part and the second part of the further coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the second part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device wherein the first magnet and a magnetizable part of the first part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet, and the first part and the second part of the further coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the second part of the magnetic system, which magnetizable part, viewed

perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet, and the magnetic system that extends entirely across the coil system.

Appealed claim 15

Appealed claim 15 defines an optical player comprising the optical scanning device of appealed claim 9, for scanning an information layer of an optically scannable information carrier, and a table which can be rotated about an axis of rotation, on which table the information carrier can be placed, said scanning device being provided with a radiation source, an optical lens system with an optical axis for focusing a radiation beam supplied, in operation, by the radiation source into a scanning spot on the information layer, and an actuator by means of which the lens system can be displaced with respect to a stationary part of the scanning device, at least in a direction parallel to the optical axis, and a displacement device by means of which at least the lens system of the scanning device can be displaced, with respect to the axis of rotation, mainly in a radial direction.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical player comprising the optical scanning device of appealed claim 9, and the magnetic system that extends entirely across the coil system.

Appealed claim 16

The Examiner's position as expressed in the Advisory Action dated August 5, 2005 is that magnetic portions 2-22 and 2-24 extend entirely across coil portions 2-18 and 2-20. The appellants respectfully, draw the Board's attention to Figure 26 within *Schell et al.* The Examiner's position is that Figure 26 within *Schell et al.* discloses that magnetic portions 2-22 and 2-24 extend entirely across coil portions 2-18 and 2-20. The appellants, respectfully, assert that a cursory view of Figure 26 within *Schell et al.* clearly shows that magnetic portions 2-22 and 2-24 do **not** extend entirely across coil portions 2-18 and 2-20. In fact Figure 26 within *Schell et al.* clearly illustrates that magnetic portions 2-22 and 2-24 extend only across a portion of coil portions 2-18 and 2-20. It should be further noted that *Schell et al.* do not disclose, mention or otherwise suggest anything that could reasonably be seen as motivating a person

skilled in the art to modify the subject matter taught by *Schell et al.* to create an optical scanning device wherein the magnetic portions extend across the coil portions.

The term “entirely” is defined by the American Heritage Dictionary as wholly or completely. Figure 3A (and all the figures within the present application for invention) clearly illustrates that the first part 67 and the second part 69 of the magnetic system extent entirely across the pair of portions 87, 89 of the coil system 63. Figure 26 within *Schell et al.* clearly illustrates that magnetic portions 2-22 and 2-24 extend only partially across coil portions 2-18 and 2-20. The appellants, respectfully, submit that the term “entirely” may not be used in a manner that is completely contradictory to the definition of the term “entirely”. Simply put, partially can not be read as being equivalent to “entirely”.

The MPEP at §2173.05(a) states under that the meaning of every term used in a claim should be apparent from the prior art or from the specification and drawings at the time the application is filed. The appellants, respectfully, submit that at the time the present application for invention was filed, that it was abundantly clear that the first part 67 and the second part 69 of the magnetic system extended entirely across the pair of portions 87, 89 of the coil system 63. Each of the drawings as originally filed illustrates first and second parts of a magnetic system that extend entirely across a pair of portions of the coil system. During patent examination, the pending claims must be given the broadest reasonable interpretation consistent with the specification. *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Prater*, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969). There is nothing within the specification or the drawings to the present application for invention as originally filed that could reasonably lead to the interpretation of the first and second parts of a magnetic system extending entirely across the pair of portions of the coil system as being equivalent to the first and second parts of a magnetic system extending partially across the pair of portions of the coil system. *Schell et al.* clearly illustrates that magnetic portions 2-22 and 2-24 extend only partially across coil portions 2-18 and 2-20. There is no additional disclosure or suggestion within *Schell et al.* for the first and second parts of a magnetic system to extend entirely across the pair of portions of the coil system. Therefore, *Schell et al.* do not anticipate appealed claim 16.

Appealed claim 17

Appealed claim 17 defines the optical scanning device as in appealed claim 16 wherein the pair of portions of the coil system contains wires extending perpendicular to the optical axis.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device as in appealed claim 16 wherein the pair of portions of the coil system contains wires extending perpendicular to the optical axis, and the magnetic system that extends entirely across the coil system.

Appealed claim 18

Appealed claim 18 defines the optical scanning device as in appealed claim 16 wherein the pair of portions of the coil system contains wires extending parallel to the optical axis.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device as in appealed claim 16 wherein the pair of portions of the coil system contains wires extending parallel to the optical axis, and the magnetic system that extends entirely across the coil system.

Appealed claim 19

Appealed claim 19 defines the optical scanning device as in appealed claim 16 wherein: the first part and the second part to the magnetic system which are each arranged next to and outside the coil system near a first side of the lens system and a second side of the lens system which is opposite the first side of the lens system; the pair of portions of the coil system having a first part and a second part, the first part of the coil system arranged near the first side, and the second part of the coil system arranged near the second side.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device as in appealed claim 16 wherein the first part and the second part to the magnetic system which are each arranged next to and outside the coil system near a first side of the lens system and a second side of the lens system which is opposite the first side of the lens system; the pair of portions of the coil system having a first part and a second part, the first part

of the coil system arranged near the first side, and the second part of the coil system arranged near the second side, and the magnetic system that extends entirely across the coil system.

Appealed claim 20

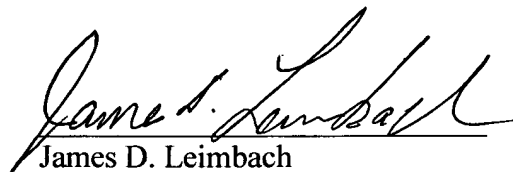
Appealed claim 20 defines the optical scanning device as in appealed claim 19 wherein the first part and the second part of the magnetic system, and the first part and the second part of the coil system are symmetrically arranged with respect to the optical axis.

The appellants, respectfully, submit that *Schell et al.* do not disclose or suggest an optical scanning device as in appealed claim 16 wherein the first part and the second part of the magnetic system, and the first part and the second part of the coil system are symmetrically arranged with respect to the optical axis, and the magnetic system that extends entirely across the coil system.

Conclusion

In summary, the examiner's rejections of the claims are believed to be in error for the reasons explained above. The rejections of each of claims 1-20 should be reversed.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James D. Leimbach", is written over a horizontal line.

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APPENDIX I. Claims on Appeal

1. An optical scanning device for scanning an information layer of an optically scannable information carrier, which scanning device is provided with a radiation source, an optical lens system with an optical axis for focusing a radiation beam supplied, in operation, by the radiation source into a scanning spot on the information layer, and an actuator by means of which the lens system can be displaced with respect to a stationary part of the scanning device at least in a direction parallel to the optical axis, the actuator being provided with an electric coil system, which is arranged in a fixed position with respect to the lens system, and a magnetic system which is arranged in a fixed position with respect to the stationary part, characterized in that the magnetic system, viewed parallel to an X-direction extending perpendicularly to the optical axis, is arranged in its entirety next to and outside the coil system, the magnetic system comprises a first part and a second part on opposite sides of the optical axis, the first part and the second part of the magnetic system each comprise at least a first and a second permanent magnet, at least a part of the coil system being situated in a magnetic stray field of the magnetic system; and the coil system further comprises a portion of the coil system situated symmetrically with respect to a junction of the first and the second magnet for both the first and second part of the magnetic system, said portion being situated between a pair of portions of the coil system arranged directly opposite, respectively, the first and second parts of the magnetic system such that the first and second part of the magnetic system extend entirely across the pair of portions of the coil system.

2. An optical scanning device as claimed in Claim 1, characterized in that the magnetic system comprises the first part and the second part which are each arranged, in their entirety, next to and outside the coil system near, respectively, a first side of the lens system and a second side of the lens system which, viewed in a direction parallel to the X-direction, is opposite the first side, the pair of portions of the coil system having a first part of the coil system arranged near the first side, and a second part of the coil system arranged near the second side, being situated, at least partly, in a magnetic stray field of, respectively, the first part and the second part of the magnetic system.

3. An optical scanning device as claimed in Claim 2, characterized in that the first part and the second part of the magnetic system, and the first part and the second part of the coil system, viewed in a direction parallel to the X-direction, are symmetrically arranged with respect to the optical axis.

4. An optical scanning device as claimed in Claim 2, characterized in that the first and the second permanent magnet which, viewed in a direction parallel to the optical axis are arranged next to each other and have a direction of magnetization extending, respectively, parallel to the X-direction and parallel to an X'-direction opposite to the X-direction, while the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first and said second part of the coil of the first part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the first part of the magnetic system, and said first and said second part of the coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the second part of the magnetic system.

5. An optical scanning device as claimed in Claim 2, characterized in that the first and the second permanent magnets which, viewed in a direction parallel to the optical axis, are arranged next to each other and have a direction of magnetization extending, respectively, parallel to the X-direction and parallel to an X'-direction opposite to said X-direction, while the coil system comprises at least one electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first part and said second part of the coil being arranged, viewed in a direction parallel to the X-direction, directly opposite, respectively, one of the two magnets of the first part of the magnetic system and one of the two magnets of the second part of the magnetic system.

6. An optical scanning device as claimed in Claim 2, characterized in that the X-direction extends transversely to an information track present on the information layer, and in that the first and the second permanent magnets which, viewed parallel to the optical axis, are arranged next to each other and have a direction of magnetization extending, respectively, parallel to the X-direction and parallel to an X'-direction opposite to the X-direction, while the coil system comprises an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said parts of the coil being arranged, viewed in a direction parallel to the optical axis, in a transition region of the two magnets of, respectively, the first part and the second part of the magnetic system.

7. An optical scanning device as claimed in Claim 1, characterized in that the X-direction extends at least substantially parallel to an information track present on the information layer, and in that the first part and the second part of the coil system each comprise at least one further electric coil from said portion having a first part and a second part, which are provided with wire portions extending parallel to the optical axis, the first part and the second part of the further coil of the first part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the first part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet, and the first part and the second part of the further coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the second part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet.

8. An optical player comprising an optical scanning device for scanning an information layer of an optically scannable information carrier, and a table which can be rotated about an axis of rotation, on which table the information carrier can be placed, said scanning device being provided with a radiation source, an optical lens system with an optical axis for

focusing a radiation beam supplied, in operation, by the radiation source into a scanning spot on the information layer, and an actuator by means of which the lens system can be displaced with respect to a stationary part of the scanning device, at least in a direction parallel to the optical axis, and a displacement device by which at least the lens system of the scanning device can be displaced, with respect to the axis of rotation, mainly in a radial direction, characterized in that the optical scanning device is an optical scanning device as claimed in Claim 1.

9. An optical scanning device having a radiation source providing a radiation beam, an optical lens system with an optical axis for focusing the radiation beam into a scanning spot on an information layer, and an actuator that can displace the lens system, the actuator being provided with an electric coil system, which is arranged in a fixed position with respect to the lens system, and a magnetic system which is arranged in a fixed position with respect to a stationary part, comprising:

a first part and a second part to the magnetic system arranged on opposite sides of the optical axis, the first part and the second part of the magnetic system each comprise at least a first and a second permanent magnet,

at least a part of the coil system being situated in a magnetic stray field of the magnetic system;

a portion of the coil system situated symmetrically with respect to a junction of the first and the second magnet for both the first and second part of the magnetic system, said portion being situated between a pair of portions of the coil system arranged directly opposite, respectively, the first and second part of the magnetic system such that the first and second part of the magnetic system extend entirely across the pair of portions having wires extending perpendicular to the optical path; and

the magnetic system, viewed parallel to an X-direction extending perpendicularly to the optical axis, is arranged in its entirety next to and outside the coil system.

10. An optical scanning device as claimed in Claim 9 further comprising

the first part and the second part to the magnetic system which are each arranged next to and outside the coil system near a first side of the lens system and a second side of the lens system which is opposite the first side of the lens system;

the pair of portions of the coil system having a first part and a second part, the first part of the coil system arranged near the first side, and the second part of the coil system arranged near the second side.

11. An optical scanning device as claimed in Claim 10 wherein the first part and the second part of the magnetic system, and the first part and the second part of the coil system are symmetrically arranged with respect to the optical axis.

12. An optical scanning device as claimed in Claim 10, wherein the first part and the second part of the magnetic system each comprise the first and the second permanent magnet having respective directions of magnetization extending parallel to the X-direction and parallel to an X'-direction opposite to the X-direction, while the first part and the second part of the coil system each comprise at least an electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to the X-direction and perpendicularly to the optical axis, said first and said second part of the coil of the first part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the first part of the magnetic system, and said first and said second part of the coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first and the second magnet of the second part of the magnetic system.

13. An optical scanning device as claimed in Claim 10, wherein the first part and the second part of the magnetic system each further comprise the two permanent magnets which, viewed in a direction parallel to the optical axis, are arranged next to each other and have a respective direction of magnetization parallel to the X-direction and parallel to an X'-direction opposite to said X-direction, while the coil system comprises at least one electric coil having a first part and a second part, which are provided with wire portions extending perpendicularly to

the X-direction and perpendicularly to the optical axis, said first part and said second part of the coil being arranged, viewed in a direction parallel to the X-direction, directly opposite, respectively, one of the two magnets of the first part of the magnetic system and one of the two magnets of the second part of the magnetic system.

14. An optical scanning device as claimed in Claim 10, characterized in that the X-direction extends at least substantially parallel to an information track present on the information layer, and in that the first part and the second part of the coil system each comprise at least one further electric coil from said portion having a first part and a second part, which are provided with wire portions extending parallel to the optical axis, the first part and the second part of the further coil of the first part of the coil system being arranged directly opposite, respectively, the first magnet and a magnetizable part of the first part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet, and the first part and the second part of the further coil of the second part of the coil system, viewed in a direction parallel to the X-direction, being arranged directly opposite, respectively, the first magnet and a magnetizable part of the second part of the magnetic system, which magnetizable part, viewed perpendicularly to the optical axis and perpendicularly to the X-direction, is situated next to the first magnet.

15. An optical player comprising an optical scanning device for scanning an information layer of an optically scannable information carrier, and a table which can be rotated about an axis of rotation, on which table the information carrier can be placed, said scanning device being provided with a radiation source, an optical lens system with an optical axis for focusing a radiation beam supplied, in operation, by the radiation source into a scanning spot on the information layer, and an actuator by means of which the lens system can be displaced with respect to a stationary part of the scanning device, at least in a direction parallel to the optical axis, and a displacement device by means of which at least the lens system of the scanning device can be displaced, with respect to the axis of rotation, mainly in a radial direction, characterized in that the optical scanning device is an optical scanning device as claimed in Claim 9.

16. An optical scanning device having a radiation source providing a radiation beam, an optical lens system with an optical axis for focusing the radiation beam into a scanning spot on an information layer, and an actuator that can displace the lens system, the actuator being provided with an electric coil system, which is arranged in a fixed position with respect to the lens system, and a magnetic system which is arranged in a fixed position with respect to a stationary part, comprising:

a first part and a second part to the magnetic system arranged on opposite sides of the optical axis, the first part and the second part of the magnetic system each comprise at least a first and a second permanent magnet,

at least a part of the coil system being situated in a magnetic stray field of the magnetic system;

a portion of the coil system situated symmetrically with respect to a junction of the first and the second magnet for both the first and second part of the magnetic system, said portion being situated between a pair of portions of the coil system, said pair of portions being in a symmetrical arrangement in an area between the first and second part of the magnetic system such that the first and second part of the magnetic system extend entirely across the pair of portions in a plane parallel to the optical axis; and

the magnetic system, viewed parallel to an X-direction extending perpendicularly to the optical axis, is arranged in its entirety next to and outside the coil system.

17. An optical scanning device as in Claim 16 wherein the pair of portions of the coil system contains wires extending perpendicular to the optical axis.

18. An optical scanning device as in Claim 16 wherein the pair of portions of the coil system contains wires extending parallel to the optical axis.

19. An optical scanning device as claimed in Claim 16 further comprising

the first part and the second part to the magnetic system which are each arranged next to and outside the coil system near a first side of the lens system and a second side of the lens system which is opposite the first side of the lens system;

the pair of portions of the coil system having a first part and a second part, the first part of the coil system arranged near the first side, and the second part of the coil system arranged near the second side.

20. An optical scanning device as claimed in Claim 19 wherein the first part and the second part of the magnetic system, and the first part and the second part of the coil system are symmetrically arranged with respect to the optical axis.